

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

| | | | |
|-----------------|------------|-------------|---|
| Client ID: | M07303 | Client: | Alaskan Copper Works |
| Date Received: | 06/23/11 | Project: | Metro Self Monitor PO M07303, F&BI 106334 |
| Date Extracted: | 06/27/11 | Lab ID: | 106334-01 x10 |
| Date Analyzed: | 06/28/11 | Data File: | 106334-01 x10.043 |
| Matrix: | Water | Instrument: | ICPMS1 |
| Units: | ug/L (ppb) | Operator: | AP |

| | | | |
|--------------------|-------------|--------------|--------------|
| Internal Standard: | % Recovery: | Lower Limit: | Upper Limit: |
| Germanium | 91 | 60 | 125 |

| Analyte: | Concentration ug/L (ppb) |
|----------|-----------------------------|
| Chromium | 484 |
| Nickel | 424 |
| Copper | 342 |
| Zinc | 19.1 |

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Analysis For Total Metals By EPA Method 200.8

| | | | |
|-----------------|----------------|-------------|---|
| Client ID: | Method Blank | Client: | Alaskan Copper Works |
| Date Received: | Not Applicable | Project: | Metro Self Monitor PO M07303, F&BI 106334 |
| Date Extracted: | 06/27/11 | Lab ID: | I1-436 mb |
| Date Analyzed: | 06/28/11 | Data File: | I1-436 mb.034 |
| Matrix: | Water | Instrument: | ICPMS1 |
| Units: | ug/L (ppb) | Operator: | AP |

| | | | |
|--------------------|-------------|--------------|--------------|
| Internal Standard: | % Recovery: | Lower Limit: | Upper Limit: |
| Germanium | 90 | 60 | 125 |

| Analyte: | Concentration ug/L (ppb) |
|----------|-----------------------------|
| Chromium | <1 |
| Nickel | <1 |
| Copper | <1 |
| Zinc | <1 |

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ENVIRONMENTAL CHEMISTS

Date of Report: 06/29/11

Date Received: 06/23/11

Project: Metro Self Monitor PO M07303, F&BI 106334

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 106347-12 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result | Percent Recovery MS | Percent Recovery MSD | Acceptance Criteria | RPD (Limit 20) |
|----------|-----------------|-------------|---------------|---------------------|----------------------|---------------------|----------------|
| Chromium | ug/L (ppb) | 20 | 1.03 | 106 | 108 | 67-132 | 2 |
| Nickel | ug/L (ppb) | 20 | <1 | 108 | 105 | 73-119 | 3 |
| Copper | ug/L (ppb) | 20 | 1.73 | 106 | 106 | 50-144 | 0 |
| Zinc | ug/L (ppb) | 50 | 1.10 | 108 | 107 | 46-148 | 1 |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|----------|-----------------|-------------|----------------------|---------------------|
| Chromium | ug/L (ppb) | 20 | 100 | 66-135 |
| Nickel | ug/L (ppb) | 20 | 101 | 67-134 |
| Copper | ug/L (ppb) | 20 | 103 | 66-134 |
| Zinc | ug/L (ppb) | 50 | 103 | 57-135 |

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Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

106334

SAMPLE CHAIN OF CUSTODY

ME 06-23-11

$$A\bar{I}_2$$

Send Report To Gerald Thompson

Company ATSKAN COPPER WORKS

Address 628 S. Hanford St

City, State, ZIP SEATTLE WA 98134

Phone # 206-571-6033 Fax # 206-382-4309

~~SAMPLERS~~ (signature)

PROJECT NAME/NO.

PO #

MEIKO SELF MONITOR

1107303

REMARKS

Page # _____ of _____

TURNAROUND TIME

☐ Standard (2 Weeks)

~~RUSH~~ 4 days

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

- ☐ Return samples

☐ Will call with instructions

[illegible]

Friedman & Bruya, Inc.
3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE

Relinquished by

Received by:

Relinquished by:

Received by:

PRINT NAME

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COMPANY

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DATE _____

6/23/11

4

TIME

17:50 r

1

Samples received at 22°C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
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FAX: (206) 283-5044
e-mail: fbi@isomedia.com

June 29, 2011

Gerald Thompson, Project Manager
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on June 23, 2011 from the Metro Self Monitor PO M07303, F&BI 106334 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
ACU0629R.DOC